SUPERFUND RESPONSE ACTION PRIORITY PANEL REVIEW FORM

Date Form Completed: September 10, 2013

General Site Information

Region:	2	City:	Village of Holley	State:	New York
CERCLIS EPA ID:	NYD067532580		CERCLIS Site Name:	Diaz Chemical Corporation	
NPL Status: (P/F/D)	Final		Year Listed to NPL:	2004	

Brief Site Description: *(Site Type, Current and Future Land Use, General Site Contaminant and Media Info, Site Area and Location information.)*

The Diaz Chemical Corporation site includes the Diaz Chemical Corporation facility and parts of the surrounding residential neighborhood. The facility is located at 40 Jackson Street, Village of Holley, Orleans County, New York.

The facility is situated on an approximately 5-acre parcel of land. It is bounded on the north by Jackson Street, where residential parcels and a parcel of land owned by Diaz Chemical, which includes a parking lot and a warehouse, are located. To the east, it is bounded by residential parcels on South Main Street. To the south and west, it is bordered by Conrail railroad tracks, beyond which lie undeveloped land, a former Duffy-Mott Corporation, Inc. building now used as a storage/shipping facility, and a small tributary to the East Branch of Sandy Creek.

The facility was initially developed as an industrial plant in the 1890s and was used primarily for tomato processing and cider vinegar production before being purchased by Diaz Chemical in 1974. Diaz Chemical was a manufacturer of specialty organic intermediates for the agricultural, pharmaceutical, photographic, color and dye, and personal care products industries. The Diaz Chemical product line varied over the years of operation, but it primarily consisted of halogenated aromatic compounds and substituted benzotrifluorides.

The facility had a long history of chemical releases to the environment, extending from 1975 to 2002. Poor housekeeping practices, loss of control of manufacturing systems, and faulty containment systems resulted in the release of a range of chemical substances to the air, water, and soil. Reported releases included mineral and organic acids, caustics, bromine, chlorine, halogenated organic compounds including parachlorobenzotrifluoride (PCBTF) and 2-chloro-6-fluorophenol (CFP), organic compounds, and petroleum-related compounds. Some releases were not limited to the facility and migrated to off-property areas, including residences and the East Branch of Sandy Creek.

An accidental air release from the facility occurred in January 2002, when a reactor vessel in a process building overheated, causing its safety valve to rupture and release approximately 75 gallons of a chemical mixture through a roof stack vent. The release consisted primarily of a mixture of steam, toluene, and CFP, as well as related phenolic compounds. The mixture landed on properties in the residential neighborhood immediately adjacent to the facility and was visible as red colored droplets on homes. Soon after the release, residents complained of acute health effects, such as sore throats, headaches, eye irritation, nosebleeds, and skin rashes. As a result of the release, several residents voluntarily relocated to area hotels with assistance from Diaz Chemical.

The site's soil and groundwater are contaminated with a number of volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs), including benzene, 1-bromo-2-chloroethane, chlorobenzene, 1,2-dichloroethane, 1,2-dibromo-3-chloropropane, fluorobenzene 2-butanone, ethylbenzene, methylene chloride, m,p-xylene, o-xylene, tetrachloroethene, trichloroethylene, and vinyl chloride.

Vapor intrusion mitigation systems have been installed at three nearby residences.

The site's historical usage has been commercial/industrial. Based upon discussions with local officials, it is anticipated that the land use in the future will stay the same.

General Project Information

Type of Action:	Remedial	Site Charging SSID:	02SN
Operable Unit:	OU 2	CERCLIS Action RAT Code:	

Is this the final action for the site that will result in a site construction completion?	☒ Yes	☐ No
Will implementation of this action result in the Environmental Indicator for Human Exposure being brought under control?	☒ Yes	☐ No

Response Action Summary

Describe briefly site activities conducted in the past or currently underway:

From 1994 to 1999, Diaz Chemical conducted a remedial investigation (RI) at the site under the oversight of the New York State Department of Environmental Conservation (NYSDEC).

Following the above-noted accidental air release and voluntarily relocation of several residents with assistance from Diaz Chemical, the State of New York obtained a court order that required Diaz Chemical to continue to fund the relocations until an appropriate environmental and health assessment was performed for the affected neighborhood. At that time, NYSDEC requested that EPA conduct an assessment of the neighborhood that was impacted by the accidental release in order to determine if further actions were necessary.

In March 2002, NYSDEC selected a remedy for the site, which required the continued operation of a groundwater extraction and treatment system via a trench which Diaz Chemical installed at the facility as an interim remedial measure in 1995. This system provided partial containment of the groundwater contaminant plume.

In May 2002, Diaz Chemical sought to discontinue the relocations for ability-to-pay reasons. Diaz Chemical and the New York State Law Department (NYSDOL) requested that EPA continue the funding of the temporary relocations. Subsequently, EPA, under its removal authority, assumed responsibility for the temporary relocation expenses of the residents who remained relocated at that time. NYSDOL and EPA performed sampling of indoor air, soil, interior surfaces, and household items in the affected neighborhood. A qualitative review of the data collected as part of this effort resulted in the conclusion that there were no immediate or short term threats to human health. Therefore, no further actions related to the residential properties under EPA's removal authority were deemed necessary.

In June 2003, Diaz Chemical filed for bankruptcy and abandoned the facility, leaving behind large volumes of chemicals in drums and tanks. EPA, under its removal authority, mobilized to the site and began providing 24-hour security at the facility to prevent public access. EPA also began operating and maintaining the groundwater extraction and treatment system at the facility. In addition, EPA shipped approximately 8,600 drums and over 112,000 gallons of bulk waste from tanks and containment areas off-site for re-use and/or disposal; emptied, decontaminated, and disposed of 105 reactor vessels and 34 tanks; dismantled and removed 51,280 linear feet of facility piping; recovered approximately 800 gallons of waste within the lines; removed and recycled 767 tons of structural steel, motors, and unprepared tank and scrap steel; removed and disposed of 5,750 tons of concrete (of which 500 tons were recycled); removed and disposed of 9 transformers containing polychlorinated biphenyls; removed and disposed of 175 cubic yards of lead-contaminated wood and 20 cubic yards of asbestos debris; decontaminated a warehouse; and dismantled all of the production buildings and tank containment areas, another warehouse, and a boiler room, electrical room, laboratory, and

an oil tank storage area.

On July 22, 2004, the site was placed on the National Priorities List.

In March 2005, EPA selected a remedy involving the property acquisition and permanent relocation of eight owner-occupant and two tenant families who had remained in temporary quarters since January 2002. Under that remedy, the acquired residences are to be maintained until the selection of a final remedy for the site. In 2005, with the assistance of the U.S. Army Corps of Engineers, EPA purchased all eight homes and provided the owners with relocation assistance. In addition, the two individual tenants were assisted with relocating into new rental dwellings.

Based upon the results of a supplemental RI conducted from 2004 through 2010 and a feasibility study (FS) completed in 2012, a remedy was selected by EPA for the site in September 2012. The selected remedy includes, among other things, building demolition (if required to obtain access to contaminated soils), in-situ thermal soil and groundwater treatment in six source areas and monitored natural attenuation to address the groundwater contaminants in the areas downgradient of the source areas.

The design of the selected remedy commenced in September 2012.

Specifically identify the discrete activities and site areas to be considered by this panel evaluation:

The planned remedial actions to be considered by the panel include building decontamination, demolition and off-site disposal of the demolition debris; in-situ thermal soil and groundwater treatment in six source areas; groundwater monitoring and the continued operation and maintenance of three existing residential vapor mitigation systems for 10 years.

Briefly describe additional work remaining at the site for construction completion after completion of discrete activities being ranked:

No other work will be necessary to achieve construction completion status.

Response Action Cost

Total Cost of Proposed Response Action:

($ amount should represent total funding need for new RA funding from national allowance above and beyond those funds anticipated to be utilized through special accounts or State Superfund Contracts.)

The estimated capital cost of the remedy is $13,200,000. The estimated annual cost is $110,000 for 30 years.

Source of Proposed Response Action Cost Amount:

(ROD, 30%, 60%, 90% RD, Contract Bid, USACE estimate, etc…)

The source of the cost information is the FS report.

Breakout of Total Action Cost Planned Annual Need by Fiscal Year:

(If the estimated cost of the response action exceeds $10 million, please provide multiple funding scenarios for fiscal year needs; general planned annual need scenario, maximum funding scenario, and minimum funding scenario.)

It is anticipated that the building decontamination and demolition and in-situ thermal treatment of the soil and will take twelve months to complete. The full capital cost would not be needed in Fiscal Year 2014, since the building decontamination and demolition (estimated at $1.6 million) would need to be performed before the infrastructure related to the in-situ treatment system can be installed. The demolition effort would take an estimated six months to complete. Therefore, the thermal treatment portion of the remedy could be funded in early Fiscal Year 2015. Because the thermal treatment portion of the remedy would be subcontracted to a specialty contractor, it is likely that the balance of the remedial action funds (estimated at $11,600,000) would need to be awarded as a lump sum.

The annual monitoring and vapor mitigation system operation and maintenance could be incrementally funded during the course of the 10 years of the long-term response action.

Other information or assumptions associated with cost estimates?

N/A

Readiness Criteria

1. Date State Superfund Contract or State Cooperative Agreement will be signed (Month)?

A Superfund State Contract (SSC) amendment (the original SSC covered the residential property acquisition and permanent relocation) covering the subject work was executed by the State on July 24, 2013.

2. If Non-Time Critical, is State cost sharing (provide details)?

N/A

3. If Remedial Action, when will Remedial Design be 95% complete?

March 2014

4. When will Region be able to obligate money to the site?

May 2014

5. Estimate when on-site construction activities will begin:

June 2014

6. Has CERCLIS been updated to consistently reflect project cost/readiness information?

CERCLIS reflects the project cost/readiness information.

Site/Project Name:	Diaz Chemical Corporation

Criteria #1 - RISKS TO HUMAN POPULATION EXPOSED (Weight Factor = 5)

Describe the exposure scenario(s) driving the risk and remedy. Include risk and exposure information on current/future use, on-site/off-site, media, exposure route, and receptors:

The current land use in the vicinity of the facility is primarily residential and commercial. To ensure overall completeness of the baseline human health risk assessment, a future recreational land use scenario was also considered. Potential receptors were based on current and potential future land uses of the site. Potential receptors evaluated under the current land use scenario included trespassers at the facility, residents within the residential area, and recreational users of the East Branch of Sandy Creek. Potential receptors evaluated under the future land use scenario included residents and utility workers within the residential area, recreational users of the East Branch of Sandy Creek, and receptors associated with three different potential future land uses at the facility: industrial/commercial use involving site workers, trespassers, and construction/utility workers; residential use accounting for residents and construction/utility workers; and park use including park users and construction/utility workers.

Exposure pathways evaluated for soil included incidental ingestion, dermal contact, and inhalation of fugitive dust and vapor by trespassers, residents, site workers, park users, and construction/utility workers. Exposure pathways evaluated for groundwater included ingestion for future site workers, and ingestion, dermal contact, and inhalation (vapor released during showering and bathing) by future residents. Exposure pathways evaluated for surface water and sediment included incidental ingestion and dermal contact by recreational users.

As part of the baseline human health risk assessment, a qualitative screening assessment to evaluate the potential for vapor intrusion into indoor air was investigated. Because many factors affect the potential for vapor intrusion into indoor air, EPA conducts vapor intrusion studies on a building-by-building basis. Several vapor intrusion studies at the Diaz facility and in the residential area have been conducted. As was noted above, as a conservative measure, EPA installed vapor mitigation systems in three homes to ensure that indoor air quality is not impacted in the future.

Two types of toxic effects were evaluated for each receptor in the risk assessment: carcinogenic effects and non-carcinogenic effects. Calculated risk estimates for each receptor were compared to EPA's acceptable range of carcinogenic risk of 1×10^{-6} to 1×10^{-4} and calculated hazard index (HI) to a target value of 1.

For current receptors (trespassers at the facility, recreational users visiting East Branch of Sandy Creek, and residents in the Residential Area), the estimated cancer risks and noncancer hazards are below or within EPA's target threshold values (cancer risk of 1×10^{-6} to 1×10^{-4} and noncancer HI of 1).

Although groundwater is not currently utilized for drinking water at the facility and in off-property areas and future potable use of groundwater is highly unlikely because a municipal water supply is readily available and serves the area, a hypothetical future use of contaminated groundwater as a potable water supply was assessed. The estimated cancer risks for future site workers (4×10^{-2}), residents (1), and child park users (2×10^{-4}) at the facility exceed EPA's target thresholds. Additionally, estimated noncancer HI for future site workers (40) and residents (3,644) at the facility exceed EPA's target threshold of 1. These future site workers and residential risks are almost entirely due to the hypothetical future use of contaminated groundwater as a potable water supply. The utilization of groundwater by off-property residents in the future scenario presents an increased cancer risk of 9×10^{-1} and a noncancer HI of 3,645. The major risk drivers identified in groundwater were benzene, 1-bromo-2-chloroethane, 1,2-dichloroethane, 1,2-dibromo-3-chloropropane, dibenz(a,h)anthracene, ethylbenzene, ethylene dibromide, PCBTF, trichloroethylene, vinyl chloride, and o-xylene.

For future child park users at a theoretical future park at the facility, the increased cancer risk is almost entirely due to the incidental ingestion of carcinogenic polycyclicaromatic hydrocarbons (cPAHs) in soil, with the major risk driver identified as benzo(a)pyrene.

Estimate the number of people reasonably anticipated to be exposed in the absence of any future EPA action for

each medium for the following time frames:

MEDIUM	<2yrs	<10yrs	>10yrs
Soil	5	100	>100

Discuss the likelihood that the above exposures will occur:

The facility portion of the site has historically been commercial/industrial. Based upon discussions with local officials, it is anticipated that the land use in the future will stay the same.

Exposures are limited to some degree since the property is not being used and is surrounded by a chain-link fence. However, the fence does not effectively prevent trespassing. If the property is redeveloped without remediation, potential human exposure to unacceptable levels of contaminants will occur.

VOCs and SVOCs in the soil serve as a source of contamination to the groundwater. All scenarios involving the use of groundwater as a drinking water source showed considerably elevated risks. Under the selected remedy, the treatment of the soil will eliminate the sources of the groundwater contamination. The Village of Holley obtains its potable water from a public water supply system consisting of one drilled well that is not affected by the site contaminants. The remedial action is expected to restore groundwater quality to allow future uses for drinking and should reduce the potential for contaminant releases which would, otherwise, potentially lead to vapor intrusion exposures in buildings in the future.

Other Risk/Exposure Information?

Beginning in 2004, the Region performed soil vapor intrusion sampling at 14 homes that were deemed to be potentially impacted by the underlying plume of contaminated groundwater. Although no indoor air impacts were found after 4 years of annual monitoring, in 2007, as a conservative measure, the Region installed a vapor mitigation system in a home where VOCs were found to be collecting under the foundation so as to ensure that indoor air quality is not impacted in the future. In addition, in 2009, carbon filter systems were installed in the basement of two other homes to remove low-levels of VOCs. Further vapor intrusion evaluation may be necessary and possibly additional homes may require the installation of vapor mitigation systems until the groundwater cleanup criteria have been achieved throughout the entire area. In addition, if new structures are built on the property, further vapor intrusion evaluation may be necessary and the installation of vapor mitigation systems may be needed.

Site/Project Name:	Diaz Chemical Corporation

Criteria #2 – SITE/CONTAMINANT STABILITY (Weight Factor = 5)

Describe the means/likelihood that contamination could impact other areas/media given current containment:

There are six source areas located at the facility in the former chemical production, transfer, and storage areas. The contaminants in these areas are attributable to spills and leaks during the production and storage of chemicals when the facility was in operation. The contaminants currently present in the source areas are primarily SVOCs with lower aqueous solubility, which allows them to persist in the unsaturated soils. Historically, rainwater and snowmelt have percolated through the contaminated soil, resulting in contaminant releases to the groundwater. The more soluble contaminants have dissolved into the groundwater and form the groundwater plumes that have moved downgradient to the East Branch of Sandy Creek. Potential receptors are future site workers, residents, and child park users exposed to soil and groundwater at the facility and residents in the residential area exposed to groundwater.

Are the contaminants contained in engineered structure(s) that currently prevents migration of contaminants? Is this structure sound and likely to maintain its integrity?

The contaminants in the soils and groundwater are not contained in an engineered structure to prevent migration.

Are the contaminants in a physical form that limits the potential to migrate from the site? Is this physical condition reversible or permanent?

The contaminants currently present in the source areas are primarily SVOCs with lower aqueous solubility, which allows them to persist in the unsaturated soils. Historically, rainwater and snowmelt have percolated through the contaminated soil, resulting in contaminant releases to the groundwater. The more soluble contaminants have dissolved into the groundwater and form the groundwater plumes that have moved downgradient to the East Branch of Sandy Creek. Potential receptors are future site workers, residents, and child park users exposed to soil and groundwater at the facility and residents in the residential area exposed to groundwater.

Are there institutional physical controls that currently prevent exposure to contamination? How reliable is it estimated to be?

No institutional controls are in place to prevent exposure to site contamination. While the site is fenced with a locked gate, the lock and fencing can be cut so that trespassers can access the on-site buildings, several of which are structurally unsound and may be contaminated.

Other information on site/contaminant stability?

N/A

Site/Project Name:	Diaz Chemical Corporation

Criteria #3 – CONTAMINANT CHARACTERISTICS (Weight Factor = 3)

(Concentration, toxicity, and volume or area contaminated above health based levels)

List Principle Contaminants (Please provide average and high concentrations.):

(Provide upper end concentration (e.g., 95% upper confidence level for the mean, as is used in a risk assessment, or maximum value [assuming it is not a true outlier], along with a measure of how values are distributed {e.g., standard deviation} or a central tendency values [e.g., average].)

Contaminant	*Media	**Concentrations
1,2-Dichloroethane	SL	0-710 µg/kg
2-Butanone	SL	10-200 µg/kg
Benzene	SL	0-90 µg/kg
Chlorobenzene	SL	1-4,500 µg/kg
Ethylbenzene	SL	0-29,000 µg/kg
m,p-Xylene	SL	0-70,000 µg/kg
Methylene Chloride	SL	1-81 µg/kg
o-Xylene	SL	0-130,000 µg/kg
Tetrachloroethene	SL	0-1,600 µg/kg
Benzene	GW	28-5,100 µg/L
1-Bromo-2-Chloroethane	GW	ND-57,900 µg/L
1,2-Dibromo-3-Chloropropane	GW	ND-21 µg/L

4-Chlorobenzotrifluoride	GW	223-20,700 µg/L
1,2-Dichloroethane	GW	130-130,000 µg/L
Ethylbenzene	GW	15-2,000 µg/L
Methylene Chloride	GW	ND-2,500 µg/L
o-Xylene	GW	ND-16,000 µg/L
Trichloroethene	GW	ND-9.5 µg/L
Vinyl Chloride	GW	6.4-100 µg/L

*(*Media: AR – Air, SL – Soil, ST – Sediment, GW – Groundwater, SW – Surface Water)*

*(**Concentrations: Provide concentration measure used in the risk assessment and Record of Decision as the basis for the remedy.)*

Describe the characteristics of the contaminant with regard to its inherent toxicity and the significance of the concentrations and amount of the contaminant to site risk. *(Please include the cleanup level of the contaminants discussed.)*

Cancer Risk Drivers

The major cancer risk drivers identified in the human health risk assessment were 1-bromo-2-chloroethane, ethylene dibromide (EDB), cis-1,2-dichloroethylene (cis-1,2-DCE), 1,2-Dibromo-3-chloropropane (DBCP), vinyl chloride, benzene, arsenic, and ethylbenzene. 1,2-dichloroethane (1,2-DCA) was detected in site groundwater at a maximum concentration of 130,000 µg/L. It has been classified as a probable human carcinogen based on the induction of several tumor types (including blood vessel and forestomach) in rats and mice. EDB, detected in groundwater at a maximum concentration of 25,000 µg/L, is considered likely to be carcinogenic to humans based on strong evidence of carcinogenicity in animals and inconclusive evidence of carcinogenicity in an exposed human population. An increased incidence in forestomach, blood vessel and thyroid cancers in animals exposed to EDB by gavage, oral and inhalation were observed. The maximum concentration of DBCP detected in site groundwater was 21 µg/L. DBCP has been identified as likely to be carcinogenic to humans through an increased incidence of developing stomach, kidney and liver cancers through oral exposure. In addition, various types of nasal cavity tumors were reported in animals exposed to DBCP through inhalation. EPA has concluded, by a weight of evidence evaluation that DBCP is carcinogenic by a mutagenic mode of action which means those exposed are assumed to have increased early-life susceptibility to developing tumors. Vinyl chloride, detected in groundwater at a maximum concentration of 100 µg/L, has also been identified as working though a mutagenic mode of action. Benzene, detected in groundwater at a maximum concentration of 5,100 µg/L, is a known human carcinogen based on epidemiological and animal studies suggesting increased risk of developing several types of cancers including leukemia.

Noncancer Risk Drivers

The major noncancer risk driving chemicals identified in the risk assessment were 1,2-DCA, EDB, DBCP, PCBTF, benzene, arsenic, TCE and o-xylene in groundwater. Exposure to the these chemicals add to the incidence of increased noncancer health effects to the following target organs/effect: developmental, blood, reproductive , liver adrenal, respiratory system, nasal, kidney, body weight, CNS, skin, heart, immune system, hair neurological, and cardiovascular system.

The maximum soil concentration for PCBTF was 219,000 µg/kg; the soil cleanup objective for this constituent was calculated to be 710 µg/kg.

The groundwater cleanup objective for PCBTF is 5 µg/L; the maximum detection in the groundwater was 20,700 µg/L. The groundwater cleanup objective for DBCP is 0.04 µg/L; the maximum detection in the

groundwater was 21 µg/L. The groundwater cleanup objective for vinyl chloride is 2 µg/L; the maximum detection in the groundwater was 100 µg/L. The groundwater cleanup objective for 1-bromo-2-chloroethane is 5 µg/L; the maximum detection in the groundwater was 57,900 µg/L. The groundwater cleanup objective for 1,1,1-trichloroethane is 5 µg/L; the maximum detection in the groundwater was 2,500 µg/L; it was also found in the soil at 570 µg/kg.

Chemicals Lacking Toxicity Information

Potential health effects for many additional targets including chlorobenzotrifluorides (CBTFs) and substituted CBTFs, brominated/fluorinated benzenes, acetophenones, and 2-bromopyridine were not quantitatively evaluated in the risk assessment due to the lack of toxicity values. The lack of toxicity information and hence risk and hazard quantification serves as a source of uncertainty in the risk assessment by potentially underestimating risk to all receptor populations. Each of these chemical groups is discussed in more detail below.

CBTFs are products of the chlorination of the trifluoromethyl-substituted aromatic compound benzotrufluoride. PCBTF belongs to the CBTF group of compounds and was identified as a noncancer risk driver in groundwater causing adverse effects to the liver. Other site specific CBTFs including 3,4-DCBTF, substituted 3-amino-4-CBTF and 3-nitro-4-CBTF lack toxicity information. CBTFs were found to be the predominant contaminants in both soil and groundwater at the site. 3,4-DCBTF, 3-amino-4-CBTF and 3-nitro-4-CBTF were detected in groundwater at concentrations up to 2,250 µg/L, 4,930 µg/L and 2,520 µg/L respectively. Elevated concentrations of CBTF products were found in soils in Area F, Tank Farm 8, Area C and D, Area E, the Railroad Spur Area, Former Soda Ash Pit, Tank Farm 5, and the Drum Storage Areas 3. During the RI investigations, concentrations up to 598,000 µg/kg of 3,4-DCBTF were detected in subsurface soils in the vicinity of the Drum Storage Area 3.

Elevated brominated/fluorinated benzene contamination was found in both soil and groundwater at the site. Subchronic animal studies have identified adverse noncancer liver and kidney effects as a result of exposure to 1,4-dibromobenzene and fluorobenzene. Risks and hazards from exposure to 4-bromofluorobenzene 1,3-dibromobenzene, fluorobenzene, 1-bromo-3-fluorobenzene and 1-bromo-4-ethylbenzene could not be quantified due to the limited or the lack of toxicity information. These chemicals were detected in groundwater at concentrations up to 9,200 µg/L, 2,710 µg/L, 5,260 µg/L, 50.2 µg/L and 434 µg/L, respectively.

Acetophenones are aromatic compounds containing the carbon-oxygen radical. They are used as raw material for the synthesis of some pharmaceuticals, fragrances and as a food flavoring agents. 3-bromoacetophenone was detected infrequently in groundwater at a maximum concentration of 12,900 µg/L. Toxicity values for 3-bromoacetophenone were not available since no human or animal studies were identified. 2-bromopyridine is a product of the direct bromination of pyridine. Elevated levels of 2-bromopyridine up to 854 µg/kg were present in subsurface soils in Tank Farm 8, Area D, the Railroad Spur and the Former Soda Ash Pit. This chemical was also widely distributed in groundwater at concentrations up to 6,040 µg/L.

Describe any additional information on contaminant concentrations that could provide a better context for the distribution, amount, and/or extent of site contamination. *(e.g. frequency of detection/outlier concentrations, exposure point concentrations, maximum or average concentration values, etc.)*

During the RI, one hundred surface (from the ground surface to two feet bgs) and subsurface (deeper than two feet) soil samples were collected from 25 locations at the facility. The principal contaminants in the soils at the facility are chlorinated, fluorinated, and brominated benzene compounds, "Tenneco Blend" hydrocarbons (primarily, xylenes and di- and trimethyl-benzenes), EDB, and 1,2-DCA. Based upon the data, it was determined that there are six source areas located at the facility in the former chemical production, transfer, and storage areas.

The groundwater investigation included two rounds of monitoring well sampling both on and off the facility

property. Round 1 gathered data on the distribution of groundwater contamination from 47 locations, including 38 existing monitoring wells, seven piezometers, one recovery well, and one dug well. Round 2 included sampling at 56 locations including 6 newly installed and 38 existing monitoring wells, eight piezometers, one recovery well, two production wells and one dug well.

The results of the RI field investigation indicate that groundwater contamination extends from the center of the facility east approximately 1,000 feet to the west side of Sandy Creek, south approximately 100 feet to the railroad tracks, and north about 300 feet. Concentrations of site-related groundwater contaminants exceeding groundwater cleanup levels are present in many monitoring wells at the facility. A variety of VOCs and SVOCs were detected in groundwater samples collected at the site including benzene, xylene, toluene, cis-1,2-DCE, vinyl chloride, PCBTF, and other chlorobenzotrifluoride compounds, bromopyridine, EDB, and fluorobenzene. Based upon historical information, many of these chemicals were used at the facility or were the constituents of releases that occurred at the site in the past.

Contaminant concentrations are highest in the overburden and weathered bedrock compared to the shallow bedrock, while the shallow bedrock shows higher concentrations compared to the deep bedrock zone. Denser than water substances would be expected to migrate downward into the water table toward the bedrock, dissolve in groundwater, and then move in the direction of groundwater flow. However, the highest concentrations of organic compounds detected in monitoring wells occur in the overburden/weathered bedrock zone. This condition is consistent with downhole geophysical logging results that indicate that the most productive water bearing zones occur in the weathered bedrock. Contaminants associated with soils in the source areas (primarily SVOCs) are expected to continue to migrate downward into groundwater in the overburden/weathered bedrock zone.

Other information on contaminant characteristics?

N/A

Site/Project Name:	Diaz Chemical Corporation

Criteria #4 – THREAT TO SIGNIFICANT ENVIRONMENT (Weight Factor = 3)

(Endangered species or their critical habitats, sensitive environmental areas.)

Describe any observed or predicted adverse impacts on ecological receptors including their ecological significance, the likelihood of impacts occurring, and the estimated size of impacted area:

A screening level ecological risk assessment (SLERA) was conducted to evaluate the potential for ecological risks from site-related contaminants to terrestrial and aquatic environments present within the study area.

The SLERA is intended to conservatively screen data in order to evaluate the potential for ecological risks associated with terrestrial and aquatic environments present within the study area. Conservative assumptions are used to identify exposure pathways and, where possible, quantify potential ecological risks.

An ecological reconnaissance was performed for the site. Areas included in the ecological reconnaissance consisted of the former facility, an unnamed creek and associated riparian areas south of the site, Sandy Creek and its associated riparian areas, and a wooded parcel located east of the site.

Information was collected regarding threatened and endangered species and ecologically sensitive environments that may exist at or in the vicinity of the site. A review of the United States Fish and Wildlife Service records indicated that the bog turtle (*Clemmys muhlenbergii*) and eastern prairie fringed orchid (*Platanthera leucophea*) are listed as being found within Orleans County. Further review of wetland maps, the New York State Herpetological Atlas, and historical records indicate that both species are unlikely to occur within the site or immediate surrounding areas.

For the purposes of the SLERA, the sources of contamination were surface and subsurface soil, and groundwater contamination associated with historic site activities, spills, and releases. Contamination from these sources may have migrated, or may continue to migrate to surrounding areas via erosion, overland flow, groundwater migration, and wind dispersion. An exposure pathway is the means by which contaminants are transported from a source to ecological receptors.

Observations made during the ecological reconnaissance indicate the study area provides habitat for a number of terrestrial and aquatic species, including invertebrates, fish, reptiles, amphibians, birds, and mammals. Ecological receptors utilizing these areas may be exposed to contaminated media via direct contact or ingestion of contaminated media and/or prey. Although several potential exposure scenarios can be identified for ecological receptors, it is most appropriate to focus the assessment on critical exposure scenarios or those most likely to contribute to risk. Thus, the SLERA focused on the direct contact exposure scenario.

Based on a comparison of maximum detected concentrations of contaminants in site soil, sediment, surface water, and pore water to conservatively derived ecological screening levels, there is potential that ecological risk may occur. Specifically, the SLERA, which utilized the most conservative assumptions, indicated potential risk to ecological receptors from a variety of contaminants of concern. However, with the exception of specific site-related compounds, the majority of these are most likely associated with regional geology, and typical anthropogenic sources such as motor vehicles and residential/agricultural pesticide application. Other than physical disturbance, observations of impacts to local flora and fauna communities related to site activities were not observed during the ecological reconnaissance. Risks from exposure to the majority of potential site related chemicals are inconclusive due to a lack of toxicity information for these compounds.

Would natural recovery occur if no action was taken? ☒ Yes ☐ No
If yes, estimate how long this would take.

The selected groundwater remedy will address the source areas in approximately one year and allow natural attenuation to address downgradient areas in approximately 30 years. If no action were taken, the restoration of the groundwater would take significantly longer than 30 years.

Other information on threat to significant environment?

N/A

Site/Project Name:	Diaz Chemical Corporation

Criteria #5 – PROGRAMMATIC CONSIDERATIONS (Weight Factor = 4)

(Innovative technologies, state/community acceptance, environmental justice, redevelopment, construction completion, economic redevelopment.)

Describe the degree to which the community accepts the response action.

The community at large, as well as elected officials, are supportive of the planned response action.

Describe the degree to which the State accepts the response action.

The State of New York agrees with the selected response action and will provide the necessary matching funds to implement the action (an SSC amendment has been executed).

Describe other programmatic considerations, e.g.; natural resource damage claim pending, Brownfields site, use of innovative technology, construction completion, economic redevelopment, environmental justice, etc...

It is anticipated that the ongoing remedial design will be completed in April 2014. It is estimated that the remedy will require 16 months to implement (four months for the building demolition and 12 months to thermally treat the soil and groundwater). Therefore, if the funding is provided as requested, it is expected that construction completion can be achieved relatively quickly (in late Fiscal Year 2015).